10/764,388

```
* * * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 14:40:19 ON 30 AUG 2006

=> file biosis medline caplus wpids uspatfull
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

FILE 'BIOSIS' ENTERED AT 14:40:43 ON 30 AUG 2006
Copyright (c) 2006 The Thomson Corporation

FILE 'MEDLINE' ENTERED AT 14:40:43 ON 30 AUG 2006

FILE 'CAPLUS' ENTERED AT 14:40:43 ON 30 AUG 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'WPIDS' ENTERED AT 14:40:43 ON 30 AUG 2006
COPYRIGHT (C) 2006 THE THOMSON CORPORATION

FILE 'USPATFULL' ENTERED AT 14:40:43 ON 30 AUG 2006
CA INDEXING COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

*** YOU HAVE NEW MAIL ***

=> s chemiluminescent and dioxetane
L1         1653 CHEMILUMINESCENT AND DIOXETANE

=> s l1 and cycloalkyl?
L2          230 L1 AND CYCLOALKYL?

=> s l2 and enzymat?
L3          180 L2 AND ENZYMAT?

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4          179 DUP REM L3 (1 DUPLICATE REMOVED)

=> s l4 and unstable (4a) light
L5           20 L4 AND UNSTABLE (4A) LIGHT

=> d l5 bib abs 1-20

L5   ANSWER 1 OF 20  WPIDS  COPYRIGHT 2006 THE THOMSON CORP on STN
AN   2004-355512 [33]   WPIDS
DNN  N2004-284152       DNC C2004-135299
TI   New 1,2-dioxetane for biological assays e.g. immunoassays, which
     is thermally stable at the temperature of enzymatic reaction and
     does not undergo rapid spontaneous decomposition in aqueous buffers.
DC   B04 D16 E13 S03
IN   GIRI, B P
PA   (GIRI-I) GIRI B P
CYC  1
PI   US 2004077018   A1 20040422 (200433)*      30
ADT  US 2004077018 A1 US 2002-382543 20021004
PRAI US 2002-382543       20021004
AN   2004-355512 [33]   WPIDS
AB   US2004077018 A UPAB: 20040525
     NOVELTY - A 1,2-dioxetane of formula (A), is new.
          DETAILED DESCRIPTION - 1,2-dioxetane of formula (A):
          R1-R4 = active sites, optionally R1, R2 fuse together to form active
```

site and R3, R4 fuse together to form active site.

When R1 has two or more hetero atoms with active site, R3, R4 are inactive and R2 is active.

INDEPENDENT CLAIMS are included for:

(1) method for generating light, which involves providing stable 1,2-dioxetane (1) and decomposing stable 1,2-dioxetane with an activating agent to give corresponding carbonyl compounds; and

(2) an alkene intermediate of formula (B) for formation of stable 1,2-dioxetane.

Ar = aryl, (un)substituted phenyl, (un)substituted naphthyl, (un)substituted anthryl or (non)aromatic (non)fluorescent group;

Y = H, alkyl, acetate, t-butyl dimethyl silyl, enzyme cleavable group or antibody cleavable group;

R1 = alkyl, aryl, aralkyl, alkaryl, heteroalkyl, heteroaryl, cycloalkyl, cycloheteroalkyl or k; and

k = alkyletheralkyl, alkyletheraryl, alkyl(etheralkyl)2, alkyl(etheralkyl)3, alkyletherhaloalkyl, alkyl(etherhaloalkyl)2, alkylalkene, alkylalkyne, arylalkene, arylalkyne, halogenated alkyl(mono, di, tri or any position in normal, branched or cyclic chain), alkylalcohol, alkylnitrile, alkylamine, alkylacid(mono or dibasic) or its inorganic salts, haloalkylalcohol, haloalkylnitrile, haloalkylamine, haloalkylacid (mono or dibasic) or its inorganic salts, linker-fluorescent molecule, linker-antibodies, linker-antigen, linker-biotin, linker-avidin, linker-protein, linker-carbohydrates or linker-lipids.

When Ar-O-Y and OR1 join together to give aryl group substituted with X-oxy group to form unstable oxide intermediate of stable 1,2-dioxetane compound when triggered to remove X such that the unstable compound decomposes to give light; R2, R3 either form cyclic, polycyclic or spiro-fused ring (C) containing carbon-carbon double bond and/or carbon-carbon triple bond in the ring or side chain with or without heteroatoms, or form cyclic, polycyclic or spiro fused ring (D) containing (un)substituted fused aromatic ring or (un)substituted aromatic ring attached by linker arms.

When Ar-O-Y and OR1 do not join together, R2 and R3 form either cyclic, polycyclic or spiro-fused ring (C) containing carbon-carbon double bond and/or carbon-carbon triple bond in the ring or side chain with or without heteroatoms, or form cyclic, polycyclic or spiro fused ring (D) containing (un)substituted carbohydrates or linker-lipids; and R2 and R3 are branched 3-8C alkyl and 3-8C cycloalkyl, which contain halogen and heteroatoms in ring or side chain.

USE - As chemiluminescent substrate for various enzymes including aryl esterase, beta -galactosidase and alkaline phosphatase, used for biological assays such as immunoassays and deoxy ribonucleic acid (DNA) probe.

ADVANTAGE - 1,2-dioxetane is thermally stable at temperature of enzymatic reaction, does not undergo rapid spontaneous decomposition in aqueous buffer, and is easily handled with desired stability. The chemiluminescent decomposition is conveniently triggered at room temperature by removing protecting group with fluoride ion, base or an enzyme to generate unstable aryloxide 1,2-dioxetane intermediate which cleaves to starting materials and yields intense blue or other colored luminescence light. The 1,2-dioxetane is capable of being modified into substrates for various enzymes.

Dwg.0/0

L5 ANSWER 2 OF 20 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2004-055097 [06] WPIDS
DNN N2004-044609 DNC C2004-022436
TI Labeling reagent useful for e.g. determining the amount of nucleic acid in a sample comprises a marker moiety and a reactive group covalently linked together.
DC B04 D16 E24 S03
IN RABBANI, E; STAVRIANOPOULOS, J G; RABBAM, E; RABBAN, E

PA (ENZO-N) ENZO LIFE SCI INC; (RABB-I) RABBANI E; (STAV-I) STAVRIANOPOULOS J G

CYC 34

PI EP 1348713 A2 20031001 (200406)* EN 102
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR
CA 2421552 A1 20030912 (200406) EN
JP 2004004048 A 20040108 (200406) 245
US 2003225247 A1 20031204 (200406)
US 2004176586 A1 20040909 (200459)
US 2004192893 A1 20040930 (200465)
US 2004203038 A1 20041014 (200468)
US 2004229248 A1 20041118 (200477)
US 2004230036 A1 20041118 (200477)
US 2004254355 A1 20041216 (200482)
US 2005004350 A1 20050106 (200504)
US 6949659 B2 20050927 (200563)
US 2006172308 A1 20060803 (200651)

ADT EP 1348713 A2 EP 2003-4894 20030306; CA 2421552 A1 CA 2003-2421552 20030311; JP 2004004048 A JP 2003-114988 20030311; US 2003225247 A1 US 2002-96075 20020312; US 2004176586 A1 Div ex US 2002-96075 20020312, US 2004-764418 20040123; US 2004192893 A1 Div ex US 2002-96075 20020312, US 2004-764417 20040123; US 2004203038 A1 Div ex US 2002-96075 20020312, US 2004-761906 20040121; US 2004229248 A1 Div ex US 2002-96075 20020312, US 2004-764393 20040123; US 2004230036 A1 Div ex US 2002-96075 20020312, US 2004-764389 20040123; US 2004254355 A1 Div ex US 2002-96075 20020312, US 2004-763076 20040122; US 2005004350 A1 Div ex US 2002-96075 20020312, US 2004-764388 20040123; US 6949659 B2 Cont of US 2002-96075 20020312, US 2004-764393 20040123; US 2006172308 A1 Div ex US 2002-96075 20020312, US 2004-763088 20040122

PRAI US 2002-96075 20020312; US 2004-764418 20040123;
US 2004-764417 20040123; US 2004-761906 20040121;
US 2004-764393 20040123; US 2004-764389 20040123;
US 2004-763076 20040122; US 2004-764388 20040123;
US 2004-763088 20040122

AN 2004-055097 [06] WPIDS

AB EP 1348713 A UPAB: 20040123
NOVELTY - A labeling reagent (XII) comprises a marker moiety and a reactive group covalently linked together.

DETAILED DESCRIPTION - A labeling reagent of formula (MR) (XII) comprises a marker moiety and a reactive group covalently linked together.

M = marker moiety comprising ligand and/or dye; and

R = reactive group capable of forming a carbon-carbon linkage with the target.

INDEPENDENT CLAIMS are included for the following:

(a) a labeled target, labeled by reacting target with (XII) to form a carbon-carbon linkage between the target and (XII);

(b) preparation of cyanine dye labeling reagent of formula (I) involving forming a mixture comprising intermediate compounds of formulae (Ia) and (Ib), and linking reagents to link (Ia) and (Ib);

(c) a labeled nucleotide comprising an aphenylic analog of a rhodamine dye, which is attached directly to the nucleotide or indirectly through a linker;

(d) a heterodimeric dye composition (C1) comprising a dye (a) containing a phenanthridinium moiety and another dye (b) different from (a) and attached through the phenyl ring of the phenanthridinium moiety;

(e) determining the amount of nucleic acid in a sample involving:

(1) forming a mixture of the sample (a dye comprising two phenanthridinium moieties linked through a phenyl group in each of the two moieties, or a dye of formula (IV), or (C1) and reagents for carrying out dye binding, hybridization and/or strand extension) to produce a complex comprising the dye and any nucleic acid present in the sample;

(2) illuminating the mixture formed at wavelength below 400 nanometer (nm); and

(3) measuring fluorescent emission from the illuminated mixture, the emission being proportional to the quantity of the nucleic acid present in the sample;

(f) a composition comprising at least one of (IV);

(g) a chemiluminescent reagent of formula (VIII) or (IX);

(h) detecting the presence or quantity of enzymatic activity in a sample involving:

(1) either forming a mixture of the sample, (VIII) or (IX) and reagents and buffers for carrying out chemiluminescent reactions or contacting (VIII) or (IX) and the reagents and buffers with the sample;

(2) enzymatically converting (VIII) or (IX) into an unstable light-emitting dioxetane form; and

(3) measuring the quantity of light generated by the enzymatic conversion; and

(i) a dye composition comprising a compound of formula Rc-Fluorescent Dye.

at least one of R1-R10 = group capable of forming a carbon to carbon bond with a target;

X1, X2 = C, O, N or S;

n = 1-3;

Y = piperidin-1-yl, -NH-(CH2)2-NH-(CH2)2-NH2, N+((CH2)2)-CH2CH2-N+((CH2)2) or N,N-diethyl-N-methylammonium;

Q = (poly)cycloalkyl;

Z = H, aralkyl, alkaryl, (hetero)alkyl, (hetero)aryl, cycloalkyl or cycloheteroalkyl;

R1a and R2a = chemical moieties;

A = cyclic ring;

Ra = chemical linker;

Rb = substrate for non-cleaving enzymatic process;

Rc = unsaturated aliphatic groups, unsaturated heterocyclic groups and/or aromatic groups.

R1a is enzymatically converted into R1b, which comprises a chemical reactive group G1. R2a is attached to the cyclic ring through an oxygen atom and comprises a chemical reactive group G2, which reacts with the G1 to convert the dioxetane to an unstable light-emitting dioxetane form. The product of enzymatic process leads to further chemical rearrangement that generate an unstable light emitting dioxetane form. Rc is capable of providing a conjugated system or an electron delocalized system with the fluorescent dye.

USE - For labeling a target; for determining the amount of nucleic acid in a sample; and for detecting the presence or quantity of enzymatic activity in a sample (claimed); and in protein and nucleic acid probe based assays.

Dwg.0/15

L5 ANSWER 3 OF 20 USPATFULL on STN
AN 2006:202424 USPATFULL
TI Labeling reagents and labeled targets comprising nonmetallic porphyrins
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabbani, Elazar, New York, NY, UNITED STATES
PA Enzo Life Sciences, Inc., c/o Enzo Biochem, Inc., New York, NY, UNITED STATES (U.S. corporation)
PI US 2006172308 A1 20060803
AI US 2004-763088 A1 20040122 (10)
RLI Division of Ser. No. US 2002-96075, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP ENZO BIOCHEM, INC., 527 MADISON AVENUE (9TH FLOOR), NEW YORK, NY, 10022, US
CLMN Number of Claims: 19
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 3541
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays. They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 4 OF 20 USPATFULL on STN
AN 2006:40616 USPATFULL
TI Processes for incorporating nucleic acid sequences into an analyte or library of analytes
IN Rabbani, Elazar, New York, NY, UNITED STATES
Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Donegan, James J., Long Beach, NY, UNITED STATES
Coleman, Jack, East Northport, NY, UNITED STATES
Liu, Dakai, Islip, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, UNITED STATES (U.S. corporation)
PI US 2006035264 A1 20060216
AI US 2005-237466 A1 20050927 (11)
RLI Division of Ser. No. US 2002-96076, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP ENZO BIOCHEM, INC., 527 MADISON AVENUE (9TH FLOOR), NEW YORK, NY, 10022, US
CLMN Number of Claims: 69
ECL Exemplary Claim: 1-413
DRWN 15 Drawing Page(s)
LN.CNT 4099
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for compositions for use in real time nucleic acid detection processes. Such real time nucleic acid detection processes are carried out with energy transfer elements attached to nucleic acid primers, nucleotides, nucleic acid probes or nucleic acid binding agents. Real time nucleic acid detection allows for the qualitative or quantitative detection or determination of single-stranded or double-stranded nucleic acids of interest in a sample. Other processes are provided by this invention including processes for removing a portion of a homopolymeric sequence, e.g., poly A sequence or tail, from an analyte or library of analytes. Compositions useful in carrying out such removal processes are also described and provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 5 OF 20 USPATFULL on STN
AN 2006:34199 USPATFULL
TI Processes for quantitative or qualitative detection of single-stranded or double-stranded nucleic acids
IN Rabbani, Elazar, New York, NY, UNITED STATES
Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Donegan, James J., Long Beach, NY, UNITED STATES
Coleman, Jack, East Northport, NY, UNITED STATES
Liu, Dakai, Islip, NY, UNITED STATES
PI US 2006029968 A1 20060209
AI US 2005-235516 A1 20050926 (11)
RLI Division of Ser. No. US 2002-96076, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP ENZO BIOCHEM, INC., 527 MADISON AVENUE (9TH FLOOR), NEW YORK, NY, 10022, US
CLMN Number of Claims: 275

ECL Exemplary Claim: 1-33
DRWN 15 Drawing Page(s)
LN.CNT 5182
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for compositions for use in real time nucleic acid detection processes. Such real time nucleic acid detection processes are carried out with energy transfer elements attached to nucleic acid primers, nucleotides, nucleic acid probes or nucleic acid binding agents. Real time nucleic acid detection allows for the qualitative or quantitative detection or determination of single-stranded or double-stranded nucleic acids of interest in a sample. Other processes are provided by this invention including processes for removing a portion of a homopolymeric sequence, e.g., poly A sequence or tail, from an analyte or library of analytes. Compositions useful in carrying out such removal processes are also described and provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 6 OF 20 USPATFULL on STN
AN 2006:27907 USPATFULL
TI Site- or sequence-specific process for cleaving analytes and library of analytes
IN Rabbani, Elazar, New York, NY, UNITED STATES
Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Donegan, James J., Long Beach, NY, UNITED STATES
Coleman, Jack, East Northport, NY, UNITED STATES
Liu, Dakai, Islip, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, UNITED STATES (U.S. corporation)
PI US 2006024738 A1 20060202
AI US 2005-237467 A1 20050927 (11)
RLI Division of Ser. No. US 2002-96076, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP ENZO BIOCHEM, INC., 527 MADISON AVENUE (9TH FLOOR), NEW YORK, NY, 10022, US
CLMN Number of Claims: 555
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 6144
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for compositions for use in real time nucleic acid detection processes. Such real time nucleic acid detection processes are carried out with energy transfer elements attached to nucleic acid primers, nucleotides, nucleic acid probes or nucleic acid binding agents. Real time nucleic acid detection allows for the qualitative or quantitative detection or determination of single-stranded or double-stranded nucleic acids of interest in a sample. Other processes are provided by this invention including processes for removing a portion of a homopolymeric sequence, e.g., poly A sequence or tail, from an analyte or library of analytes. Compositions useful in carrying out such removal processes are also described and provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 7 OF 20 USPATFULL on STN
AN 2006:27906 USPATFULL
TI Process for removal of homopolymeric sequence portion from analyte(s) and library of analytes
IN Babbani, Elazar, New york, NY, UNITED STATES
Stavrianopoulos, Jannis G., Baysnore, NY, UNITED STATES
Donegan, James J., Long Beach, NY, UNITED STATES
Coleman, Jack, East Northport, NY, UNITED STATES

Liu, Dakai, Islip, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, UNITED STATES (U.S. corporation)
PI US 2006024737 A1 20060202
AI US 2005-237442 A1 20050927 (11)
RLI Division of Ser. No. US 2002-96076, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP ENZO BIOCHEM, INC., 527 MADISON AVENUE (9TH FLOOR), NEW YORK, NY, 10022, US
CLMN Number of Claims: 17
ECL Exemplary Claim: 1-527
DRWN 15 Drawing Page(s)
LN.CNT 3943
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for compositions for use in real time nucleic acid detection processes. Such real time nucleic acid detection processes are carried out with energy transfer elements attached to nucleic acid primers, nucleotides, nucleic acid probes or nucleic acid binding agents. Real time nucleic acid detection allows for the qualitative or quantitative detection or determination of single-stranded or double-stranded nucleic acids of interest in a sample. Other processes are provided by this invention including processes for removing a portion of a homopolymeric sequence, e.g., poly A sequence or tail, from an analyte or library of analytes. Compositions useful in carrying out such removal processes are also described and provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 8 OF 20 USPATFULL on STN
AN 2006:27904 USPATFULL
TI Chimeric nucleic acid constructs and compositions comprising sets of nucleic acid constructs
IN Rabbani, Elazar, New York, NY, UNITED STATES
Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Donegan, James J., Long Beach, NY, UNITED STATES
Coleman, Jack, East Northport, NY, UNITED STATES
Liu, Dakai, Lslip, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, UNITED STATES (U.S. corporation)
PI US 2006024735 A1 20060202
AI US 2005-236151 A1 20050927 (11)
RLI Division of Ser. No. US 2002-96076, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP ENZO BIOCHEM, INC., 527 MADISON AVENUE (9TH FLOOR), NEW YORK, NY, 10022, US
CLMN Number of Claims: 52
ECL Exemplary Claim: 1-404
DRWN 15 Drawing Page(s)
LN.CNT 4013
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for compositions for use in real time nucleic acid detection processes. Such real time nucleic acid detection processes are carried out with energy transfer elements attached to nucleic acid primers, nucleotides, nucleic acid probes or nucleic acid binding agents. Real time nucleic acid detection allows for the qualitative or quantitative detection or determination of single-stranded or double-stranded nucleic acids of interest in a sample. Other processes are provided by this invention including processes for removing a portion of a homopolymeric sequence, e.g., poly A sequence or tail, from an analyte or library of analytes. Compositions useful in carrying out such removal processes are also described and provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 9 OF 20 USPATFULL on STN
AN 2005:159178 USPATFULL
TI Real-time nucleic acid detection processes and compositions
IN Rabbani, Elazar, New York, NY, UNITED STATES
Stavrianopoulos, Jannis G., Baysnore, NY, UNITED STATES
Donegan, James J., Long Beach, NY, UNITED STATES
Coleman, Jack, East Northport, NY, UNITED STATES
Liu, Dakai, Islip, NY, UNITED STATES
PI US 2005137388 A1 20050623
AI US 2002-96076 A1 20020312 (10)
DT Utility
FS APPLICATION
LREP ENZO BIOCHEM, INC., 527 MADISON AVENUE (9TH FLOOR), NEW YORK, NY, 10022, US
CLMN Number of Claims: 542
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 6158
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for compositions for use in real time nucleic acid detection processes. Such real time nucleic acid detection processes are carried out with energy transfer elements attached to nucleic acid primers, nucleotides, nucleic acid probes or nucleic acid binding agents. Real time nucleic acid detection allows for the qualitative or quantitative detection or determination of single-stranded or double-stranded nucleic acids of interest in a sample. Other processes are provided by this invention including processes for removing a portion of a homopolymeric sequence, e.g., poly A sequence or tail, from an analyte or library of analytes. Compositions useful in carrying out such removal processes are also described and provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 10 OF 20 USPATFULL on STN
AN 2005:62915 USPATFULL
TI Riboswitches, methods for their use, and compositions for use with riboswitches
IN Breaker, Ronald R., Guilford, CT, UNITED STATES
Nahvi, Ali, New Haven, CT, UNITED STATES
Sudarsan, Narasimhan, New Haven, CT, UNITED STATES
Ebert, Margaret S., Hopewell, NJ, UNITED STATES
Winkler, Wade, New Haven, CT, UNITED STATES
Barrick, Jeffrey E., New Haven, CT, UNITED STATES
Wickiser, John K., New Haven, CT, UNITED STATES
PI US 2005053951 A1 20050310
AI US 2003-669162 A1 20030922 (10)
PRAI US 2002-412468P 20020920 (60)
DT Utility
FS APPLICATION
LREP NEEDLE & ROSENBERG, P.C., SUITE 1000, 999 PEACHTREE STREET, ATLANTA, GA, 30309-3915
CLMN Number of Claims: 19
ECL Exemplary Claim: 1
DRWN 89 Drawing Page(s)
LN.CNT 11346
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB It has been discovered that certain natural mRNAs serve as metabolite-sensitive genetic switches wherein the RNA directly binds a small organic molecule. This binding process changes the conformation of the mRNA, which causes a change in gene expression by a variety of different mechanisms. Modified versions of these natural "riboswitches"

(created by using various nucleic acid engineering strategies) can be employed as designer genetic switches that are controlled by specific effector compounds. Such effector compounds that activate a riboswitch are referred to herein as trigger molecules. The natural switches are targets for antibiotics and other small molecule therapies. In addition, the architecture of riboswitches allows actual pieces of the natural switches to be used to construct new non-immunogenic genetic control elements, for example the aptamer (molecular recognition) domain can be swapped with other non-natural aptamers (or otherwise modified) such that the new recognition domain causes genetic modulation with user-defined effector compounds. The changed switches become part of a therapy regimen-turning on, or off, or regulating protein synthesis. Newly constructed genetic regulation networks can be applied in such areas as living biosensors, metabolic engineering of organisms, and in advanced forms of gene therapy treatments.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 11 OF 20 USPATFULL on STN
AN 2005:5243 USPATFULL
TI Novel chemiluminescent reagents
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabbani, Elazar, New York, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, 10022 (U.S. corporation)
PI US 2005004350 A1 20050106
AI US 2004-764388 A1 20040123 (10)
RLI Division of Ser. No. US 2002-96075, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP Ronald C. Fedus, Esq., Enzo Life Sciences, Inc., c/o Enzo Biochem, Inc., 527 Madison Avenue (9th Floor), New York, NY, 10022-4304
CLMN Number of Claims: 17
ECL Exemplary Claim: CLM-1-286
DRWN 15 Drawing Page(s)
LN.CNT 3601
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays. They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 12 OF 20 USPATFULL on STN
AN 2004:321700 USPATFULL
TI Labeling reagents comprising aphenylic analogs of rhodamine dyes
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabbani, Elazar, New York, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY (U.S. corporation)
PI US 2004254355 A1 20041216
AI US 2004-763076 A1 20040122 (10)
RLI Division of Ser. No. US 2002-96075, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP Ronald C. Fedus, Esq., Enzo Life Sciences, Inc., c/o Enzo Biochem, Inc., 527 Madison Avenue (9th Floor), New York, NY, 10022-4304
CLMN Number of Claims: 286
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 4545
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays. They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 13 OF 20 USPATFULL on STN
AN 2004:292946 USPATFULL
TI Heterodimeric dye composition
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabban, Elazar, New York, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, UNITED STATES, 10022 (U.S. corporation)
PI US 2004230036 A1 20041118
AI US 2004-764389 A1 20040123 (10)
RLI Division of Ser. No. US 2002-96075, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP Ronald C. Fedus, Esq., Enzo Life Sciences, Inc., c/o Enzo Biochem, Inc., 527 Madison Avenue (9th Floor), New York, NY, 10022-4304
CLMN Number of Claims: 286
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 4541
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays. They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 14 OF 20 USPATFULL on STN
AN 2004:292164 USPATFULL
TI Novel dye labeling composition
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabbani, Elazar, New York, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, 10022 (U.S. corporation)
PI US 2004229248 A1 20041118
US 6949659 B2 20050927
AI US 2004-764393 A1 20040123 (10)
RLI Division of Ser. No. US 2002-96075, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP Ronald C. Fedus, Esq., Enzo Life Sciences, Inc., c/o Enzo Biochem, Inc., 527 Madison Avenue, 9th Floor, New York, NY, 10022-4304
CLMN Number of Claims: 4
ECL Exemplary Claim: CLM-1-286
DRWN 15 Drawing Page(s)
LN.CNT 3537
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays.

They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 15 OF 20 USPATFULL on STN
AN 2004:260541 USPATFULL
TI Process for preparing novel cyanine dye labeling reagents
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabbam, Elazar, New York, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, 10022 (U.S. corporation)
PI US 2004203038 A1 20041014
AI US 2004-761906 A1 20040121 (10)
RLI Division of Ser. No. US 2002-96075, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP Ronald C. Fedus, Esq., Enzo Life Sciences, Inc., c/o Enzo Biochem, Inc., 527 Madison Avenue (9th Floor), New York, NY, 10022-4304
CLMN Number of Claims: 15
ECL Exemplary Claim: CLM-1-286
DRWN 15 Drawing Page(s)
LN.CNT 3584
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays. They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 16 OF 20 USPATFULL on STN
AN 2004:248291 USPATFULL
TI Process for detecting the presence or quantity of enzymatic activity in a sample
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabbani, Elazar, New York, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, UNITED STATES, 10022 (U.S. corporation)
PI US 2004192893 A1 20040930
AI US 2004-764417 A1 20040123 (10)
RLI Division of Ser. No. US 2002-96075, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP Ronald C. Fedus, Esq., Enzo Life Sciences, Inc., c/o Enzo Biochem, Inc., 527 Madison Avenue (9th Floor), New York, NY, 10022-4304
CLMN Number of Claims: 36
ECL Exemplary Claim: CLM-1-286
DRWN 15 Drawing Page(s)
LN.CNT 3665
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays. They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 17 OF 20 USPATFULL on STN
AN 2004:228200 USPATFULL

TI Process for detecting the presence or quantity of enzymatic activity in a sample
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabbani, Elazar, New York, NY, UNITED STATES
PA Enzo Life Sciences, Inc., New York, NY, UNITED STATES (U.S. corporation)
PI US 2004176586 A1 20040909
AI US 2004-764418 A1 20040123 (10)
RLI Division of Ser. No. US 2002-96075, filed on 12 Mar 2002, PENDING
DT Utility
FS APPLICATION
LREP Ronald C. Fedus, Esq., Enzo Life Sciences, Inc., c/o Enzo Biochem, Inc., 527 Madison Avenue (9th Floor), New York, NY, 10022-4304
CLMN Number of Claims: 286
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 4543
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays. They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 18 OF 20 USPATFULL on STN
AN 2003:319498 USPATFULL
TI Labeling reagents and labeled targets, target labeling processes and other processes for using same in nucleic acid determinations and analyses
IN Stavrianopoulos, Jannis G., Bayshore, NY, UNITED STATES
Rabbani, Elazar, New York, NY, UNITED STATES
PI US 2003225247 A1 20031204
AI US 2002-96075 A1 20020312 (10)
DT Utility
FS APPLICATION
LREP ENZO LIFE SCIENCES, INC., c/o ENZO BIOCHEM, INC., 527 Madison Avenue, 9th Floor, New York, NY, 10022
CLMN Number of Claims: 286
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 4499
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides for labeling reagents, labeled targets and processes for preparing labeling reagents. The labeling reagents can take the form of cyanine dyes, xanthene dyes, porphyrin dyes, coumarin dyes or composite dyes. These labeling reagents are useful for labeling probes or targets, including nucleic acids and proteins. These reagents can be usefully applied to protein and nucleic acid probe based assays. They are also applicable to real-time detection processes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 19 OF 20 USPATFULL on STN
AN 2002:22112 USPATFULL
TI Biomarkers for the labeling, visual detection and quantification of biomolecules
IN Bevers, Susan Ann, Waltham, MA, UNITED STATES
Andrade, Rodrigo Bohn, Somerville, MA, UNITED STATES
Alexandrov, Kiril Stefan, Cambridge, MA, UNITED STATES
Zdraveski, Zoran Z., Cambridge, MA, UNITED STATES
PI US 2002012947 A1 20020131

AI US 2001-804893 A1 20010313 (9)
PRAI US 2000-189264P 20000314 (60)
US 2000-209188P 20000605 (60)
DT Utility
FS APPLICATION
LREP HALE AND DORR, LLP, 60 STATE STREET, BOSTON, MA, 02109
CLMN Number of Claims: 33
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1402
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to the detection of biomolecules. In particular, the invention relates to biomarkers for the labeling, visually detection and quantification of biomolecules. The invention provides visually detectable biomolecules and reagents for their preparation, as well as methods for visually detecting a biomolecule and for determining the size of a biomolecule. The labeled biomolecules of the invention are intensely colored and can be readily observed by visual inspection, without prior illumination or chemical or enzymatic activation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 20 OF 20 USPATFULL on STN
AN 90:74917 USPATFULL
TI Method and compositions providing enhanced chemiluminescence from 1,2-dioxetanes
IN Schaap, Arthur P., Detroit, MI, United States
PA Board of Governors of Wayne State University, Detroit, MI, United States (U.S. corporation)
PI US 4959182 19900925
AI US 1989-317585 19890301 (7)
RLI Division of Ser. No. US 1988-224681, filed on 27 Jul 1988 which is a continuation-in-part of Ser. No. US 1986-887139, filed on 17 Jul 1986
DT Utility
FS Granted
EXNAM Primary Examiner: Maples, John S.; Assistant Examiner: Treanor, Richard
LREP McLeod, Ian C.
CLMN Number of Claims: 36
ECL Exemplary Claim: 1
DRWN 16 Drawing Figure(s); 10 Drawing Page(s)
LN.CNT 1466
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method and compositions including a 1,2-dioxetane and a fluorescent compound is described. In particular, enzymatic triggering of a triggerable 1,2-dioxetane admixed with a surfactant and the fluorescent compound attached to a hydrocarbon to provide a co-surfactant in a micelle or other structure providing close association of these molecules is described. The method and compositions are useful in immunoassays and in DNA probes used for various purposes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> file reg
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	110.57	110.78

FILE 'REGISTRY' ENTERED AT 14:58:15 ON 30 AUG 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 29 AUG 2006 HIGHEST RN 905300-98-3
DICTIONARY FILE UPDATES: 29 AUG 2006 HIGHEST RN 905300-98-3

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

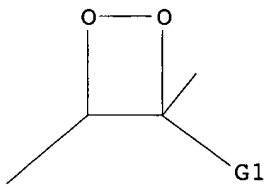
REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=>
Uploading C:\Program Files\Stnexp\Queries\10764388.str

L7 STRUCTURE UPLOADED

=> d l7
L7 HAS NO ANSWERS
L7 STR



G1 Cb,Cy,Hy

Structure attributes must be viewed using STN Express query preparation.

=> s l7 full
FULL SEARCH INITIATED 14:58:39 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 5575 TO ITERATE

100.0% PROCESSED 5575 ITERATIONS 26 ANSWERS
SEARCH TIME: 00.00.01

L8 26 SEA SSS FUL L7

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	166.94	277.72

FILE 'CAPLUS' ENTERED AT 14:58:49 ON 30 AUG 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 30 Aug 2006 VOL 145 ISS 10
FILE LAST UPDATED: 29 Aug 2006 (20060829/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/infopolicy.html

*** YOU HAVE NEW MAIL ***

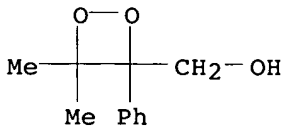
=> s l8
L9 8 L8

=> dup rem l9
PROCESSING COMPLETED FOR L9
L10 8 DUP REM L9 (0 DUPLICATES REMOVED)

=> d l10 bib abs hitstr 1-8

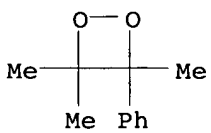
L10 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:73577 CAPLUS
DN 136:232486
TI Spiroiminodihydantoin Is a Major Product in the Photooxidation of 2'-Deoxyguanosine by the Triplet States and Oxyl Radicals Generated from Hydroxyacetophenone Photolysis and Dioxetane Thermolysis
AU Adam, Waldemar; Arnold, Markus A.; Gruene, Matthias; Nau, Werner M.; Pischel, Uwe; Saha-Moeller, Chantu R.
CS Institut fuer Organische Chemie, Universitaet Wuerzburg, Wuerzburg, D-97074, Germany
SO Organic Letters (2002), 4(4), 537-540
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal
LA English
OS CASREACT 136:232486
AB Photolysis of hydroxyacetophenone and thermolysis of the corresponding dioxetane afford spiroiminodihydantoin rather than 4,8-dihydro-4-hydroxy-8-oxo-2'-deoxyguanosine (4-HO-8-oxodG) through the oxidation of 2'-deoxyguanosine (dG) by triplet-excited hydroxyacetophenone and the peroxyl radicals derived thereof by α cleavage and subsequent oxygen trapping. The structure of the spiroiminodihydantoin is assigned by the SELINQUATE NMR technique, which unequivocally establishes the spirocyclic connectivity.
IT 403731-45-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(spiroiminodihydantoin is a major product in the photooxidn. of 2'-deoxyguanosine by the triplet states and oxyl radicals generated from hydroxyacetophenone photolysis and dioxetane thermolysis)
RN 403731-45-3 CAPLUS
CN 1,2-Dioxetane-3-methanol, 4,4-dimethyl-3-phenyl- (9CI) (CA INDEX NAME)

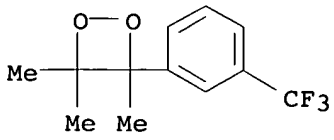


RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

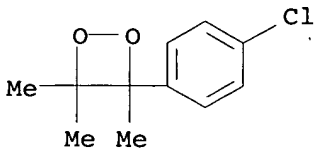
L10 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:519964 CAPLUS
DN 135:288429
TI Relation between the structure of β-peroxyalkyl radicals and selectivity of epoxide formation in oxidation of substituted styrenes
AU Suprun, V. Ya.; Opeida, I. A.
CS Inst. fur Tech. und Makromol. Chem., Martin Luther Univ., Merseburg, Germany
SO Zhurnal Fizicheskoi Khimii (2001), 75(5), 843-849
CODEN: ZFKHA9; ISSN: 0044-4537
PB MAIK Nauka
DT Journal
LA Russian
AB Weak correlation between electronic and mol. structure parameters of ring- and chain-substituted styrenes and the β-peroxyalkyl radicals formed from them by addition of MeOO• to the β-position (e.g., in the simplest case PhCH•CH2OOMe) suggested that reactant properties alone were inadequate for explanation of epoxidn. selectivity, the latter determined by reaction of the β-peroxyalkyl radicals. A final regression equation for epoxidn. selectivity containing electron d., Coulomb repulsion, as well as thermodn. terms for chain propagation (enthalpy of decomposition of β-peroxyalkyl radical to the epoxide + alkoxy radical, enthalpy of reaction of β-peroxyalkyl radical with O2) had a correlation coefficient of 0.951.
IT 108773-71-3 108773-73-5 364329-43-1
364329-44-2
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(dioxetane; relation between the structure of β-peroxyalkyl radicals and selectivity of epoxide formation in oxidation of substituted styrenes)
RN 108773-71-3 CAPLUS
CN 1,2-Dioxetane, 3,3,4-trimethyl-4-phenyl- (9CI) (CA INDEX NAME)



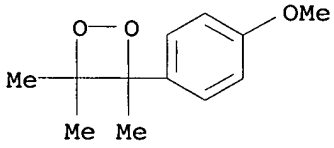
RN 108773-73-5 CAPLUS
CN 1,2-Dioxetane, 3,3,4-trimethyl-4-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



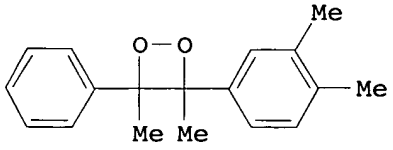
RN 364329-43-1 CAPLUS
CN 1,2-Dioxetane, 3-(4-chlorophenyl)-3,4,4-trimethyl- (9CI) (CA INDEX NAME)



RN 364329-44-2 CAPLUS
CN 1,2-Dioxetane, 3-(4-methoxyphenyl)-3,4,4-trimethyl- (9CI) (CA INDEX NAME)



L10 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1991:582433 CAPLUS
DN 115:182433
TI Excited state selectivity in the thermolysis of a 3,4-diaryl-3,4-dimethyl-1,2-dioxetane
AU Richardson, William H.; Batinica, Greg; Janota-Perret, Kasia; Miller, Todd; Shen, Dongming
CS Dep. Chem., San Diego State Univ., San Diego, CA, 92182, USA
SO Journal of Organic Chemistry (1991), 56(21), 6140-4
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
OS CASREACT 115:182433
GI



I

AB Total efficiencies for the production of triplet ketones from cis- and trans-3-(3,4-dimethylphenyl)-4-phenyl-1,2-dioxetane (I) are 14.1 ± 0.2% and 21.3 ± 0.5%, resp. The specific efficiency for the production of triplet acetophenone from trans-I was determined to be 19 ± 4% by trapping the triplet with 2-methyl-2-butene to give the oxetane. These results show that the production of triplets from the dioxetane is state selective,

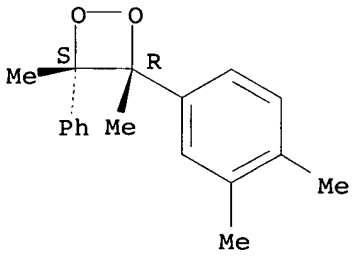
since the η,π* acetophenone triplet is higher in energy than the alternative π,π* triplet of 3,4-dimethylacetophenone. This state-selective production of triplet ketone is most reasonably dictated by orbital symmetry control in the thermolysis of the dioxetane. With this assumption, implications on the mechanism of dioxetane decomposition in terms of biradical intermediates or a concerted biradicaloid process are considered. Activation parameters for thermolysis of cis- and trans-I are consistent with a biradical or biradicaloid mechanism. From these activation parameters and mol. mechanics calcns., it was concluded that the transition state was not quite half-way between the dioxetane reactant and a biradical intermediate, if the reaction proceeded through a biradical intermediate. In conjunction with earlier reported triplet efficiencies of 3,4-diaryl-3,4-dimethyl-1,2-dioxetanes and the efficiencies of cis- and trans-I, the participation of a triplet exciplex was suggested.

IT 135584-35-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and treatment with silver acetate)

RN 135584-35-9 CAPLUS

CN 1,2-Dioxetane, 3-(3,4-dimethylphenyl)-3,4-dimethyl-4-phenyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

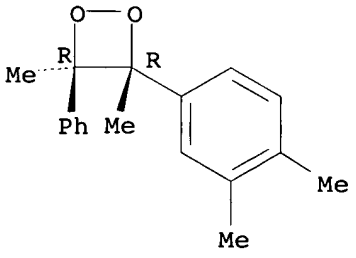


IT 135584-36-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(thermolysis of, excited state selectivity in)

RN 135584-36-0 CAPLUS

CN 1,2-Dioxetane, 3-(3,4-dimethylphenyl)-3,4-dimethyl-4-phenyl-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L10 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN

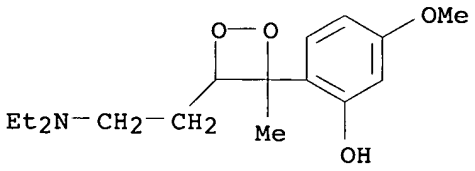
AN 1989:580846 CAPLUS

DN 111:180846

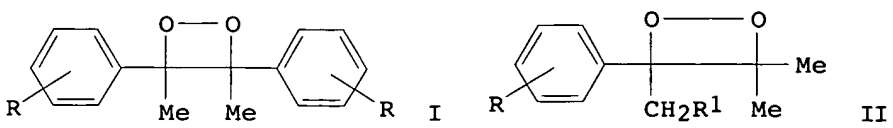
TI Utility of derivative spectrophotometry in the determination of carbochromen hydrochloride and dipyridamole in the presence of their oxidative degradation products

AU Barary, Magda H.; Elsayed, M. Abdel Hady; Abdel-Hay, Mohamed H.; Mohamed, Suzy M.

CS Fac. Pharm., Univ. Alexandria, Alexandria, Egypt
SO Analytical Letters (1989), 22(7), 1643-64
CODEN: ANALBP; ISSN: 0003-2719
DT Journal
LA English
AB Direct spectrophotometric methods for the determination of carbochromen-HCl and dipyridamole, each in the presence of its oxidative degradation products, were presented. The methods were based on the first derivative (D1) and second derivative (D2) spectrophotometric measurement (absolute trough, U) at 336 nm and (Peak-trough, Y) at 309-342 nm for carbochromen-HCl and at 240-260 nm(U) and 246-268 nm(Y) for dipyridamole. Plots of D1 or D2 vs. concentration were linear over the concentration range of 8.00-16.00 μg/mL for carbochromen-HCl and 4.00-12.00 μg/mL for dipyridamole. Oxidative degradation of these drugs was optimized with respect to H2O2 concentration Determining the intact in coexistence with its oxidative degradation product, the proposed derivative spectrophotometric methods proved to be of high potential in correcting the systematic error appearing in the results of the Amax method due to the latter. Assaying the com. tablets, the proposed method gave results of high accuracy and reproducibility.
IT 123253-46-3
RL: ANST (Analytical study)
(carbochromen determination in presence of, as oxidation product, by derivative spectrophotometry)
RN 123253-46-3 CAPLUS
CN Phenol, 2-[4-[2-(diethylamino)ethyl]-3-methyl-1,2-dioxetan-3-yl]-5-methoxy- (9CI) (CA INDEX NAME)



L10 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1987:477159 CAPLUS
DN 107:77159
TI Substituent effects upon efficiency of excited-state acetophenones produced on thermolysis of 3,4-diaryl-3,4-dimethyl-1,2-dioxetanes
AU Richardson, William H.; Stiggal-Estberg, Diana L.; Chen, Zhangping; Baker, John C.; Burns, David M.; Sherman David G.
CS Dep. Chem., San Diego State Univ., San Diego, CA, 92182, USA
SO Journal of Organic Chemistry (1987), 52(14), 3143-50
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
OS CASREACT 107:77159
GI

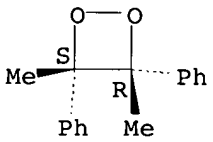


AB Triplet efficiencies (α) in the thermolysis of the title dioxetanes (I; R = H, 4-MeO, 4-Me, 4-Br, 3-Br, 3-CF3, etc.) were sensitive to R, and the best correlation of log α was with the lowest triplet energy of the acetophenones formed. In the case of monoaryldioxetanes II (R = H, 3-CF3, 3-Br, R1 = H; R = H, 3-CF3, 4-Me, 4-MeO, etc., R1 = Br), α did not depend on R, and the triplet energy of the acetone formed was higher than that of the acetophenones. An exciplex or encounter complex was proposed. Kinetic data were obtained, and LFER with σ+ consts. yielded ρ = -0.285 and -0.20 for I and II, resp. A 1,4-dioxy biradical decomposition process was suggested.

IT 57274-08-5P 57274-09-6P 108773-71-3P
108773-72-4P 108773-73-5P 108773-74-6P
108773-75-7P 108773-76-8P 108773-77-9P
108773-78-0P 108773-79-1P 108773-80-4P
108773-81-5P 108773-82-6P 108773-83-7P
108773-84-8P 108773-85-9P 108773-86-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and thermolysis mechanism of)

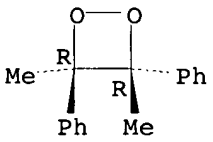
RN 57274-08-5 CAPLUS
CN 1,2-Dioxetane, 3,4-dimethyl-3,4-diphenyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

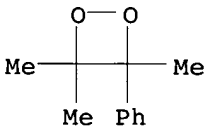


RN 57274-09-6 CAPLUS
CN 1,2-Dioxetane, 3,4-dimethyl-3,4-diphenyl-, trans- (9CI) (CA INDEX NAME)

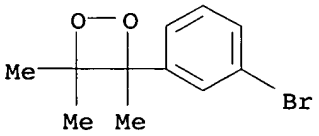
Relative stereochemistry.



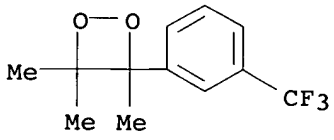
RN 108773-71-3 CAPLUS
CN 1,2-Dioxetane, 3,3,4-trimethyl-4-phenyl- (9CI) (CA INDEX NAME)



RN 108773-72-4 CAPLUS
CN 1,2-Dioxetane, 3-(3-bromophenyl)-3,4,4-trimethyl- (9CI) (CA INDEX NAME)

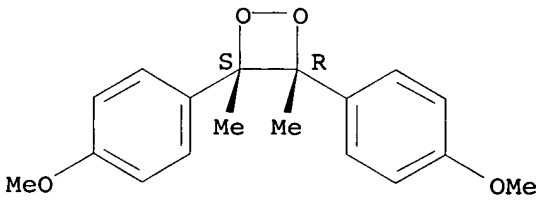


RN 108773-73-5 CAPLUS
CN 1,2-Dioxetane, 3,3,4-trimethyl-4-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



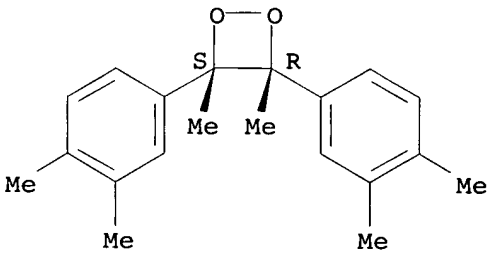
RN 108773-74-6 CAPLUS
CN 1,2-Dioxetane, 3,4-bis(4-methoxyphenyl)-3,4-dimethyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



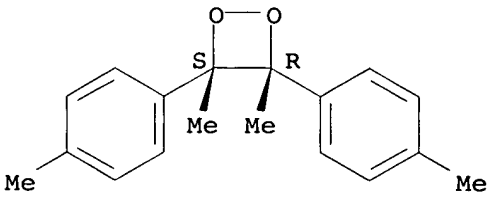
RN 108773-75-7 CAPLUS
CN 1,2-Dioxetane, 3,4-bis(3,4-dimethylphenyl)-3,4-dimethyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



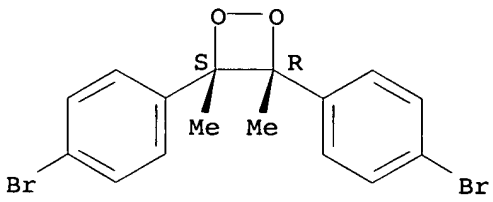
RN 108773-76-8 CAPLUS
CN 1,2-Dioxetane, 3,4-dimethyl-3,4-bis(4-methylphenyl)-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



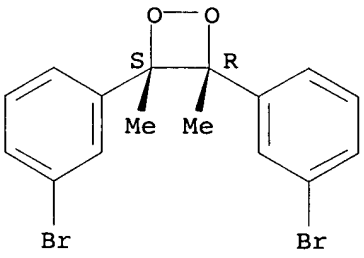
RN 108773-77-9 CAPLUS
CN 1,2-Dioxetane, 3,4-bis(4-bromophenyl)-3,4-dimethyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



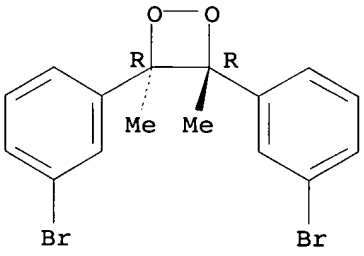
RN 108773-78-0 CAPLUS
CN 1,2-Dioxetane, 3,4-bis(3-bromophenyl)-3,4-dimethyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



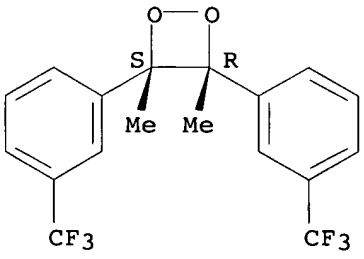
RN 108773-79-1 CAPLUS
CN 1,2-Dioxetane, 3,4-bis(3-bromophenyl)-3,4-dimethyl-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.

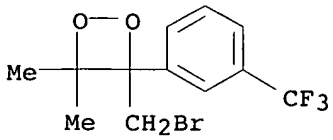


RN 108773-80-4 CAPLUS
CN 1,2-Dioxetane, 3,4-dimethyl-3,4-bis[3-(trifluoromethyl)phenyl]-, cis- (9CI) (CA INDEX NAME)

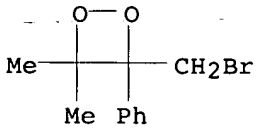
Relative stereochemistry.



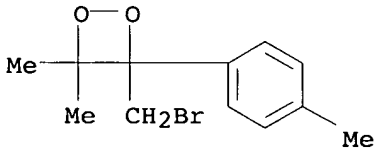
RN 108773-81-5 CAPLUS
CN 1,2-Dioxetane, 3-(bromomethyl)-4,4-dimethyl-3-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



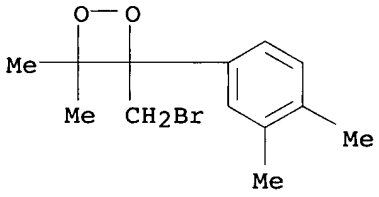
RN 108773-82-6 CAPLUS
CN 1,2-Dioxetane, 3-(bromomethyl)-4,4-dimethyl-3-phenyl- (9CI) (CA INDEX NAME)



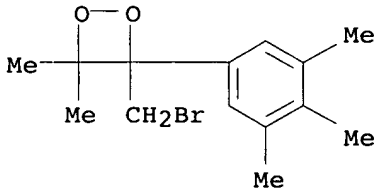
RN 108773-83-7 CAPLUS
CN 1,2-Dioxetane, 3-(bromomethyl)-4,4-dimethyl-3-(4-methylphenyl)- (9CI) (CA INDEX NAME)



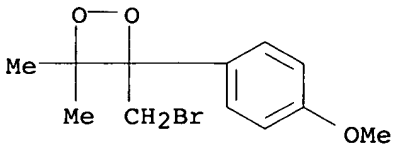
RN 108773-84-8 CAPLUS
CN 1,2-Dioxetane, 3-(bromomethyl)-3-(3,4-dimethylphenyl)-4,4-dimethyl- (9CI) (CA INDEX NAME)



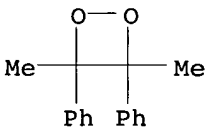
RN 108773-85-9 CAPLUS
CN 1,2-Dioxetane, 3-(bromomethyl)-4,4-dimethyl-3-(3,4,5-trimethylphenyl)- (9CI) (CA INDEX NAME)



RN 108773-86-0 CAPLUS
CN 1,2-Dioxetane, 3-(bromomethyl)-3-(4-methoxyphenyl)-4,4-dimethyl- (9CI) (CA INDEX NAME)



L10 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1978:510723 CAPLUS
DN 89:110723
TI Electronic excitation transfer in polymers. 3. Singlet-singlet, triplet-singlet, and triplet-triplet energy transfers. Evidence for triplet migration among pendant phenyl groups of polystyrene
AU Turro, Nicholas J.; Kochevar, Irene E.; Noguchi, Yasuhiro; Chow, Ming-Fea
CS Chem. Dep., Columbia Univ., New York, NY, USA
SO Journal of the American Chemical Society (1978), 100(10), 3170-7
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
AB The triplet energy migration among the pendant Ph groups on the polystyrene (I) [9003-53-6] backbone may cause unexpectedly large critical transfer radii, Rc, values for triplet-triplet energy transfer from ketone donors to acceptors in films of I or in poly(Me methacrylate) [9011-14-7] at 50°, as determined by chemiluminescent techniques. Tetramethyl-1,2-dioxetane [35856-82-7] and 3,4-diphenyl-3,4-dimethyldioxetane [67024-59-3] were used to generate excited (singlet and triplet) acetone [67-64-1] and (triplet) acetophenone [98-86-2], resp. Anal. of quenching data in terms of the Perrin, Foerster or Dexter models all yielded Rc values in the range of 23-29 Å for singlet-singlet and for triplet-singlet energy transfer. For the triplet-triplet energy transfer, the values of Rc were in the range of 11-17 Å with the exception of the acetone triplet to 1,4-dibromonaphthalene [83-53-4] transfer in I, for which Rc = 21 Å.
IT 67024-59-3
RL: USES (Uses)
(excitation by, for energy transfer in polymers)
RN 67024-59-3 CAPLUS
CN 1,2-Dioxetane, 3,4-dimethyl-3,4-diphenyl- (9CI) (CA INDEX NAME)



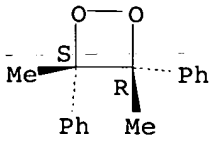
L10 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1976:89313 CAPLUS
DN 84:89313
TI Structural effects on excited state production by dioxetanes. 3,4-Dimethyl-3,4-diphenyldioxetane and 3-methyl-3-phenyldioxetane
AU Umbreit, Martha A.; White, Emil H.
CS Dep. Chem., Johns Hopkins Univ., Baltimore, MD, USA
SO Journal of Organic Chemistry (1976), 41(3), 479-82
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
AB The preparation of 3,4-dimethyl-3,4-diphenyldioxetane (I) is reported. Its activation energy for decomposition is 25 ± 1 kcal/mol., and its activation

entropy is -3 ± 3 eu. The efficiency of excited triplet ketone production of I is equal to that of tetramethyldioxetane (II) as determined by direct comparison of dioxetane-induced dibromoanthracene emission. The efficiency of 3-methyl-3-phenyldioxetane, determined by the same method, is less than one-third that of II.

IT 57274-08-5P 57274-09-6P
RL: PREP (Preparation)
(efficiency of excited triplet ketone production of)

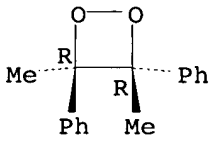
RN 57274-08-5 CAPLUS
CN 1,2-Dioxetane, 3,4-dimethyl-3,4-diphenyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 57274-09-6 CAPLUS
CN 1,2-Dioxetane, 3,4-dimethyl-3,4-diphenyl-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.



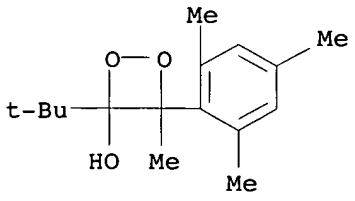
L10 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1943:8407 CAPLUS
DN 37:8407
OREF 37:1406e-i,1407a-c
TI The addition of methylmagnesium iodide to tert-butyl mesityl diketone
AU Fuson, Reynold C.; Robertson, J. A.
SO Journal of Organic Chemistry (1942), 7, 466-71
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA Unavailable
GI For diagram(s), see printed CA Issue.
AB In order to effect 1,2- addition of Grignard reagents to mesityl ketones, tert- Bu mesityl diketone (I) is subjected to the action of MeMgI. A solution of 46 g. tert-butylglyoxal, b. 112-15°, prepared in 48% yield by oxidation of pinacolone with SeO2, in 40 cc. mesitylene is added over a period of 45 min. to an ice-cold mixture of 160 cc. mesitylene and 108 g. AlCl3 and is stirred for 1 h. at 5° and for 4 h. at room temperature After standing overnight, the mixture is poured into 600 g. ice and 200 cc. concentrated HCl. After dilution with 1 l. H2O, the mixture is stirred for 30 min.
with 250 cc. ether, filtered through a layer of C and the ether solution, after washing with H2O and NaHCO3, is fractionated under reduced pressure. The product, b2 125-30°, (30 g.) is recrystd. from EtOH and is mesitylpivalylcarbinol (II), m. 117-18°. When in an identical run the mixture is stirred for 9 h. at 5° and decomposed, 40 g. of a product, b2 122-8°, is obtained which does not crystallize from EtOH at room temperature but at -80° and m. 44° after 3 crystns. and is tert-butylmesitoylcarbinol (III). Treatment of III with Ac2O and pyridine gives the Ac derivative, m. 68°. When a solution of 0.5 g. III in 10 cc. absolute EtOH is added to a solution of 0.5 g. Na in 10 cc. absolute EtOH

in a N atmospheric and the mixture stirred for 2 h. at room temperature and for 2 h. at 75°, III is isomerized, giving II. II, treated in the same way, is recovered unchanged. A mixture of 23 g. II or III with 50 g. $CuSO_4.5H_2O$, 50 cc. pyridine and 20 cc. H_2O heated at 100° for 3 days with stirring, gives 19 g. I, b2 115-18°, nD20 1.5068; oxime m. 139°. Reduction of I in EtOH in the presence of PtO at 2 atmospheric gives II. When in a similar experiment, the colorless reduction product is allowed to stand in a N atmospheric, a test with Na 2,6-dichloroindophenol indicates the presence of the enediol, MeC(OH):C(OH)Mes (Mes = mesityl), which lasts for 4-5 h. When 25 g. III in 150 cc. EtOH is treated with H for 8 h. in the presence of Cu chromite at 175° and 1500 lbs., 92% 1,2-butylmesitylethylene glycol (IV), m. 84-5°, is obtained; di-Ac derivative m. 73-4°. Dehydration of IV by beating 2 g. with 10 cc. concentrated H_2SO_4 and 15 cc. H_2O for 6 h. gives 1 g. Me_3CCOCH_2Mes, m. 80-1°; oxime m. 147°. When to a solution of MeMgI from 8.5 g. MeI, 8 g. I in 15 cc. ether is slowly added, the mixture refluxed for 4 h. and decomposed with HCl, 4 g. tert-butylmesitoylmethylcarbinol (V), m. 81-2°, is obtained after repeated crystallization from petr. ether. V has 1 active H according to Zerevitinov and gives with AcCl and pyridine an Ac derivative, m. 77°. From the mother liquor of V, 1.5 g. mesitylmethylpivalylcarbinol (VI), m. 104-5°, is isolated. VI has 1 active H but does not give an Ac derivative When 3 g. V is heated for 5 h. on a steam bath with a mixture of 60 cc. AcOH and 35 cc. 60% H_2SO_4, and the mixture, after dilution with 200 cc. H_2O, is extracted with ether, distillation of the residue gives pinacolone, b. 100-10° (semicarbazone m. 154-6°), and mesitylene, b18 55° (di-NO_2 derivative m. 84-6°). When 3 g. VI is heated on a steam bath with 30 cc. 50% H_2SO_4, 2.5 g. tert-Bu α-mesitylvinyl ketone (VII), b3 112°, nD20 1.5180, is obtained. Reduction of VII in the presence of PtO gives mesitylmethylpivalylmethane, m. 86°. When air is passed for 1 h. through a freshly reduced solution of VII in EtOH, the enol peroxide, $Me_3CC(OH).CMeMes$, m. 106°, is formed. When 21 g. pivalylmesitylene (VIII) is added to a solution of MeMgI in Bu_2O and refluxed for 12 h., 17 g. VIII, b2 92-8°, nD20 1.5097, is the only compound recovered.

IT 867132-86-3, 1,2-Dioxetan-3-ol, 3-tert-butyl-4-mesityl-4-methyl-
(preparation of)

RN 867132-86-3 CAPLUS

CN 1,2-Dioxetan-3-ol, 3-tert-butyl-4-mesityl-4-methyl- (4CI) (CA INDEX NAME)



=>